

CMA Series
Commercial Mixer/Amplifiers
Operation Manual



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INTRODUCTION

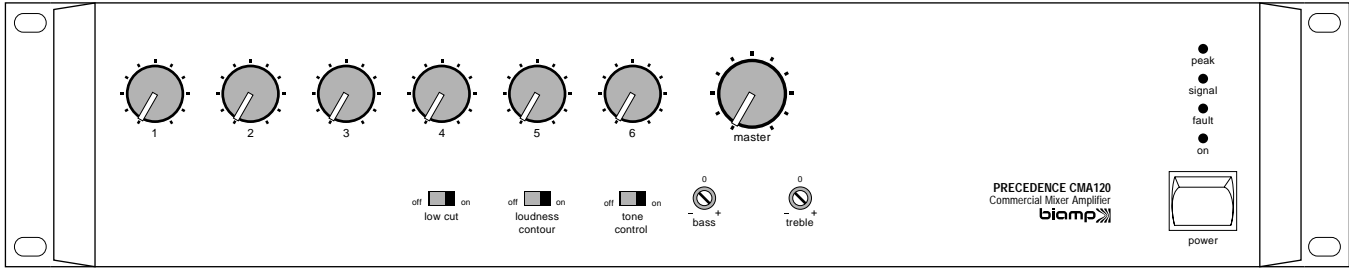
The **CMA Series** of commercial mixer/amplifiers combines a versatile 6-input mic/line mixer with either 30, 60, 120, or 350 Watt amplification. Mixing functions include mic/line/telephone inputs, selectable automatic & manual channel muting, channel priority assignment, remote level control, tone control, a built-in compressor, an internal chime, phantom power, and extensive output patching. The amplifier includes an output transformer, and provides rated power into direct or distributed speaker systems. The CMA Series carries a five-year warranty.

CMA Series features include:

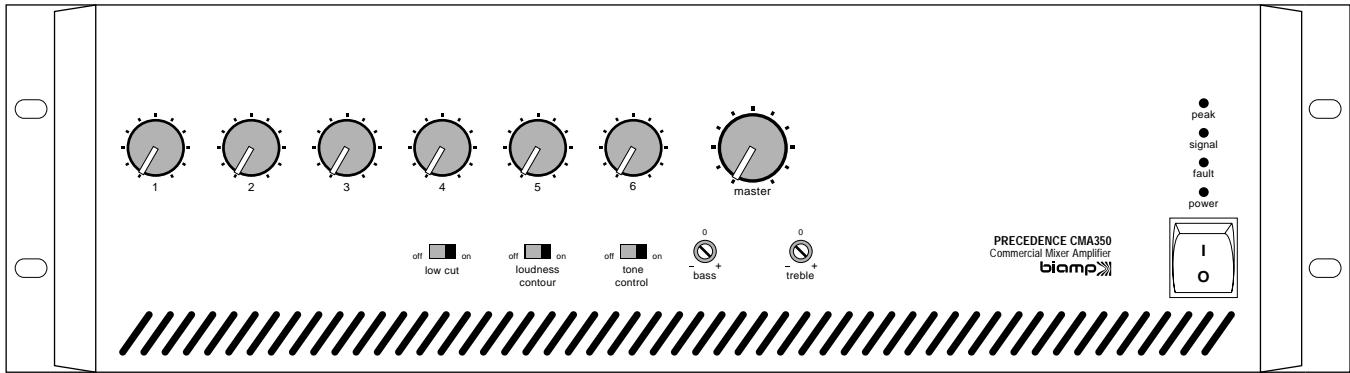
- ◆ integrated mixer, power amplifier, and output transformer
- ◆ five electronically balanced microphone/line input channels
- ◆ one transformer balanced microphone/line/tel input channel
- ◆ rear panel trim control & pad switch on each input channel
- ◆ +24 Volt phantom power selectable on each input channel
- ◆ input isolation transformer option on mic/line input channels
- ◆ automatic muting of selected channels (-10, -20, or -40dB)
- ◆ automatic muting triggered by selected "priority" channels
- ◆ manual muting of selected channels (-10, -20, or -40dB)
- ◆ manual muting triggered from remote contact closures
- ◆ remote control of master level via rear panel terminals
- ◆ integral output compressor with rear panel threshold control
- ◆ recessed treble & bass controls plus "loudness" & "low-cut"
- ◆ two insert points for signal processing and remote control
- ◆ two line-outs and one stack-in for system interconnections
- ◆ 30, 60, 120, or 350 Watts into direct or distributed systems
- ◆ front panel indicators for power, fault, signal, and peak
- ◆ internal 'pre-announcement' chime tone with level control
- ◆ input/output connections provided on barrier strip terminals
- ◆ integral security cover and removable rack-wing/handles
- ◆ covered by Five-Year "Gold Seal" Warranty
- ◆ CEE marked, UL and C-UL (UL Canada) listed

FRONT PANEL FEATURES

CMA30, CMA60, & CMA120 Front Panels



CMA350 Front Panel



FRONT PANEL FEATURES

Level (Channels 1~6): These controls adjust the amount of signal sent from the individual input channels to the mixer output. Optimum Level setting is near the 12 o'clock position (unity gain).

Level (Master): This control adjusts the amount of signal sent from the mixer output to the amplifier input. The Master Level control is used to adjust the overall volume of the system.

Low Cut: This switch inserts a low cut filter at the amplifier input.

Loudness Contour: This switch inserts a loudness filter at the mixer output (+6dB @ 100Hz & +4dB @ 10kHz). The Loudness filter provides tonal compensation when operating with low-level music signals.

Tone Control: This switch enables the Bass & Treble controls.

Bass: This screwdriver control adjusts the low-frequencies ("Bass") at the mixer output ($\pm 10\text{dB}$ @ 100Hz).

Treble: This screwdriver control adjusts the high-frequencies ("Treble") at the mixer output ($\pm 10\text{dB}$ @ 10kHz).

Peak Indicator: This red LED flashes when signal levels at the amplifier output have reached maximum. Occasional flashes of the Peak Indicator are acceptable, however, a continuously lit LED may indicate an excessive level setting.

Signal Indicator: This yellow LED remains lit when signal is present at the amplifier output.

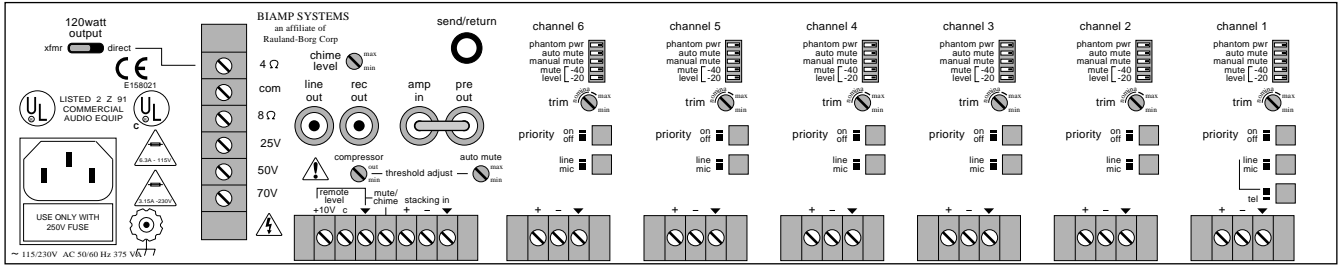
Fault Indicator: This red LED lights to indicate fault conditions due to overheating, DC offset voltage, or failure of low-voltage power. The Fault Indicator will light for 3-5 seconds at turn-on, and then go off if no fault is detected. Some faults (such as overheating) will correct themselves when the unit has been turned off awhile. If the Fault Indicator remains lit when the unit is turned back on, contact your local Biamp Systems dealer.

On Indicator: This green LED remains lit when AC power is applied to the unit.

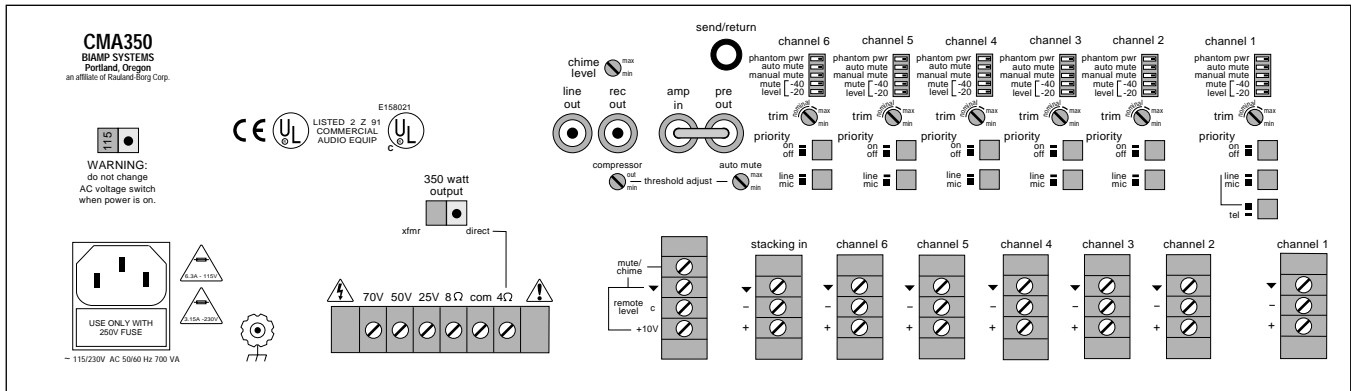
Power Switch: This switch applies AC power to the unit.

REAR PANEL FEATURES

CMA30, CMA60, & CMA120 Rear Panels



CMA350 Rear Panel



Power Entrance: This receptacle accepts a 3-prong AC power cord. **WARNING: DO NOT REMOVE OR DEFEAT THE GROUND PRONG, AS THIS CONSTITUTES A SHOCK HAZARD.** The removable lower portion of the receptacle holds the AC fuse. **NOTE:** See AC Fuse on page 7 for replacement by qualified personnel. A chassis ground post is provided (next to the receptacle) for system grounding.

Power Selector Switch (model CMA350 only): This switch selects either 115 Volt or 230 Volt AC operation for model CMA350 (see Modifications on pg. 7). Power Selector Switches for other models are on the underside of the chassis.

Output Selector: This switch selects either direct output or transformer coupled output from the amplifier. On models CMA60, CMA120, & CMA350 direct output is from the 4Ω terminal. On model CMA30, direct output is from the 8Ω terminal.

Output Terminals: These screw terminals provide connection for speaker loads (4Ω, 8Ω, 25V, 50V, 70V, or 100V) at the amplifier output. **NOTE:** 100V output is an export model option only. **WARNING: THE LOUDSPEAKER OUTPUTS POSE A RISK OF HAZARDOUS ENERGY. LOUDSPEAKER CONNECTIONS MUST BE MADE PROPERLY. THE OUTPUT TERMINAL COVER MUST BE INSTALLED WHEN THE DEVICE IS ENERGIZED.**

Chime Level: This control adjusts the volume level of the chime tone (see Mute/Chime on next page). To turn the chime tone off completely, set this control to the fully counter-clockwise position.

Send/Return: This 3-conductor TRS 1/4" Phone jack provides an insert point for signal processing or remote control devices. It is wired with Tip as send, Ring as return, and Sleeve as ground. Send/Return is after Stacking In, Loudness, & Tone, but before Compressor, Master Level, & Low Cut. Send/Return is a switching jack, which interrupts the signal flow only when a plug is inserted.

REAR PANEL FEATURES

Line Out: This RCA phono jack provides an unbalanced line-level output from the mixer. Line Out is after Stacking In, Loudness, Tone, Compressor, & Master Level, but before Low Cut.

Rec Out: This RCA phono jack provides an unbalanced line-level output from the mixer. Rec Out is after Stacking In, but before Loudness, Tone, Compressor, Master Level, & Low Cut.

Pre Out: This RCA phono jack provides an unbalanced line-level output from the mixer. Pre Out is after Stacking In, Loudness, & Tone, but before Compressor, Master Level, & Low Cut. Pre Out and Amp In may be used together as an insert point for signal processing or remote control devices. Remove jumper before connecting devices. To connect Pre Out to both Amp In and an external device, a parallel ('Y') cable must be used.

Amp In: This RCA phono jack provides an unbalanced line-level input to the amplifier. Amp In is after Stacking In, Loudness, & Tone, but before Compressor, Master Level, & Low Cut. Pre Out and Amp In may be used together as an insert point for signal processing or remote control devices. Remove jumper before connecting devices.

Compressor: This control adjusts the threshold level at which the internal compressor circuit is activated. The internal compressor has a fixed compression ratio of 4:1, and is used to reduce peaks in output signal level, as well as to moderate volume differences between loud and soft signals.

Auto Mute: This control adjusts the threshold level at which signals from "priority" channels will automatically trigger muting of selected non-priority channels (see Assignment & Priority below).

Remote Level: These two screw terminals (plus "•") provide remote volume control of the master level. An internal voltage controlled amplifier (VCA) allows remote control from up to 2000 feet away, using any 5k-50k Ω linear taper potentiometer and/or switch to provide adjustment and/or muting of the master level. Potentiometers are wired with high-side to "+10V", low-side to "•", and wiper to "C". Switches simply connect (or disconnect) "+10V" to "C", and do not require a ground ('•') connection. **NOTE:** *The factory installed jumper (between "+10V" & "C") must be in place when a remote control is not being used.*

Mute/Chime: This screw terminal (plus "•") allows manual muting of any selected channels, via an external switch or contact closure (see Assignment & Priority below). When the Chime Level control is turned up (on), a pre-announcement chime tone will also be activated by the switch or contact closure.

Stacking In: These screw terminals provide a balanced line-level input to the mix bus, for input expansion. Stacking In is before Loudness, Tone, Compressor, Master Level, & Low Cut. For unbalanced input, wire high to (+) and ground to both (-) & (•).

Assignment: These five DIP switches are used to assign specific functions to the individual channels. To assign a function, move the respective switch to the left. Phantom Pwr assigns +24 Volts DC phantom power to the channel input, for powering condenser microphones. **CAUTION: TO AVOID DAMAGE TO EQUIPMENT, ASSIGN PHANTOM POWER ONLY ON CHANNELS WHICH ARE SELECTED FOR 'MIC' INPUT AND WHICH REQUIRE PHANTOM POWER.** Auto Mute assigns a (non-priority) channel to be muted whenever signal is present in any "priority" channel. Manual Mute assigns a channel to be muted whenever the Mute/Chime terminals are shorted together via a switch or contact closure. Mute Level assigns the amount of muting (-10dB, -20dB, or -40dB) which is applied to a channel, when triggered by either Auto Mute or Manual Mute. **NOTE:** *-10dB muting will occur when both switches are to the right. -40dB muting will occur when both switches are to the left.*

Trim: This control adjusts the input gain of the channel, to compensate for various input signal levels. Once the Line/Mic switch has been set to the proper position (see Line/Mic below), the Trim control should be adjusted so that peaks in signal level do not cause distortion at the channel input.

Priority: This switch assigns a channel to "priority". When signal is present in a "priority" channel, any (non-priority) channels which are assigned to Auto Mute will be muted by their selected amount. **NOTE:** *A "priority" channel cannot be auto muted by another "priority" channel, but a "priority" channel can be manual muted.*

Line/Mic: This switch selects the proper impedance and gain for either microphone or line-level input signals. Depress the switch for line-level input. Release the switch for microphone input. On Channel 1, the Tel switch (see Tel below) must be released for the Line/Mic switch to operate.

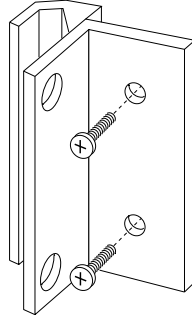
Tel (Channel 1 only): This switch selects the proper impedance and gain for input from 600 ohm sources. The input for Channel 1 includes an isolation transformer, which allows connection to most telephone system audio ports.

Inputs: These screw terminals provide a balanced input connection for the channel. For unbalanced input, wire high to (+) and ground to both (-) & (•). The input for Channel 1 includes an isolation transformer. Input isolation transformers are optional on Channels 2-6 (Biamp #908-0040-00).

MODIFICATIONS

CAUTION: THE FOLLOWING INFORMATION IS FOR USE BY QUALIFIED INSTALLATION/SERVICE PERSONNEL.

Removable Rack-Handles: The CMA Series have removable rack-handles. To remove the rack-handles: 1) Remove the two screws from the side of each rack-handle. 2) Remove the rack-handles. 3) Replace the mounting screws in the sides of the chassis.



Security Cover: The CMA Series includes a removable front panel security cover. A hole in the security cover provides access only to the power switch. To remove the security cover: 1) Using a 3mm hex wrench, loosen the two captive security cover mounting screws. 2) Remove the security cover.

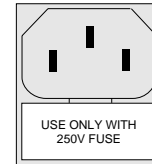


MODIFICATIONS

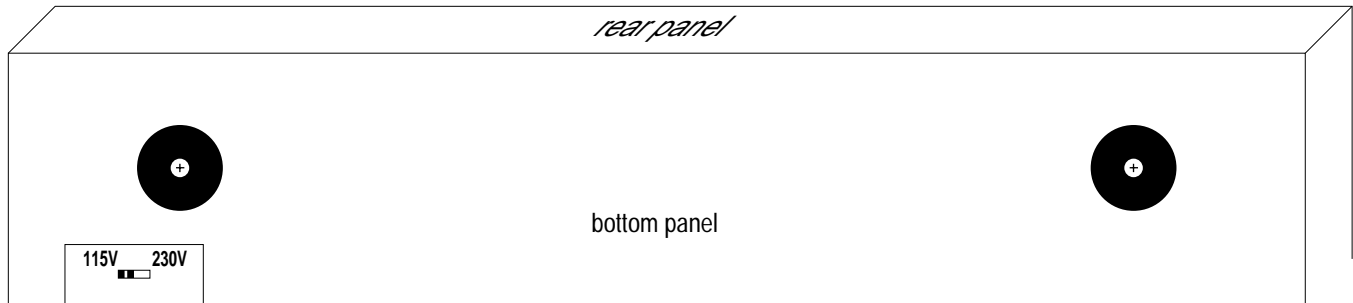
WARNING: TO REDUCE THE RISK OF SHOCK, DISCONNECT ALL POWER FROM THE UNIT BEFORE MAKING ANY INTERNAL MODIFICATIONS OR EXTERNAL FIELD WIRING CONNECTIONS.

115V/230V AC Operation: The CMA Series may be converted to 230V operation for use in other countries. To convert to 230V operation: 1) Remove the fuse holder compartment from the lower portion of the rear panel AC Power Cord receptacle. 2) Replace the fuse in the fuse clip with the same type and appropriate value fuse (see table below). 3) Replace the fuse holder compartment.

230V fuse values
CMA30 - 1A NB 250V
CMA60 - 2A NB 250V
CMA120 - 3A NB 250V
CMA350 - 3.15A SB 250V



4) Select the 230V position on the Power Selector Switch. The Power Selector Switch for models CMA30, CMA60, & CMA120 is recessed into the underside of the chassis, near the AC Power Cord receptacle. The Power Selector Switch for model CMA350 is instead located on the left side of the rear panel, above the AC Power Cord receptacle.



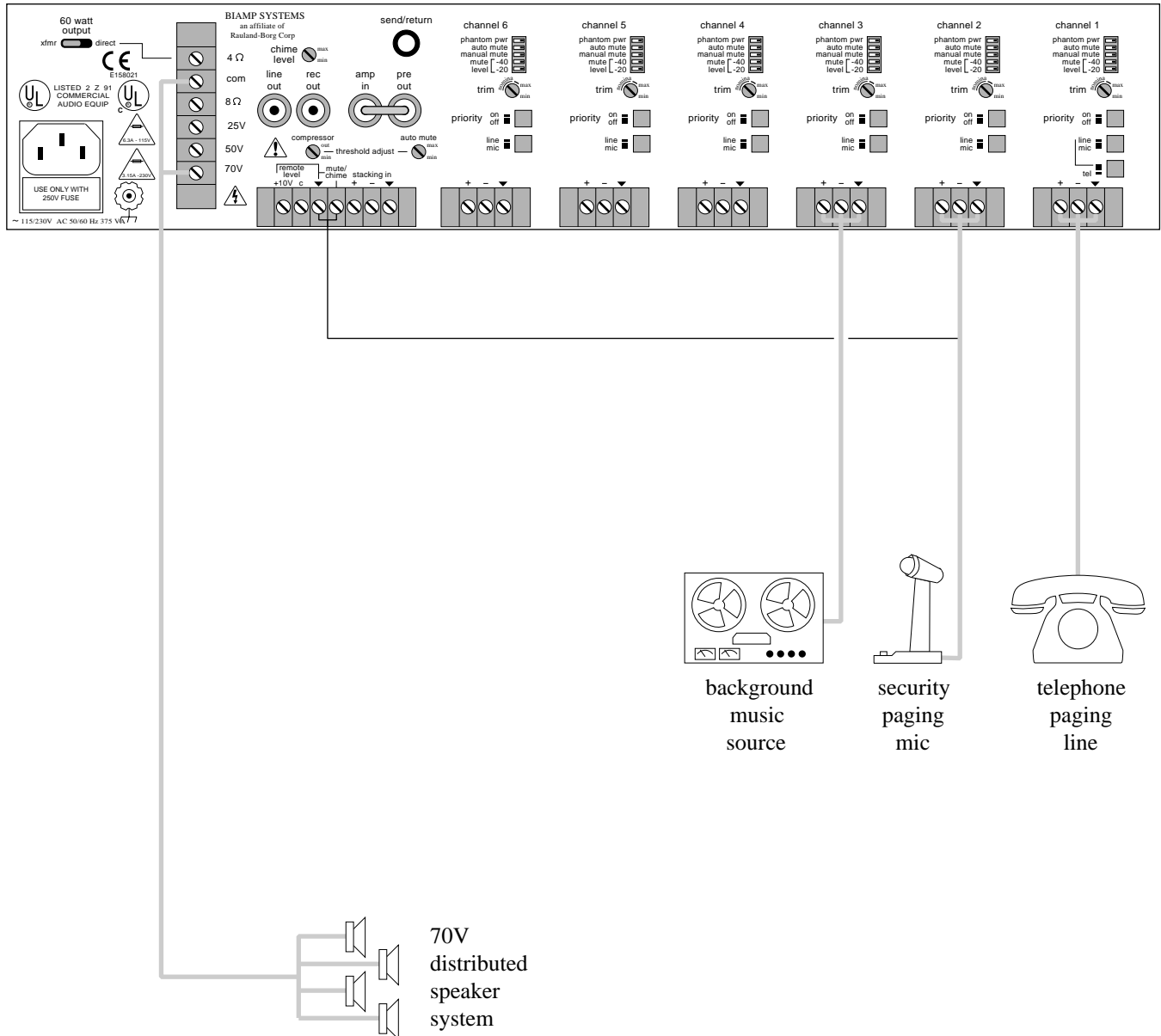
AC Fuse: The AC Fuse is in the lower portion of the AC Power Cord receptacle. If the AC fuse should require replacement, see table below for proper value. **WARNING: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME VALUE AND TYPE FUSE.**

<u>MODEL</u>	<u>115 VAC</u>	<u>230 VAC</u>
CMA30	2A NB	1A NB
CMA60	4A NB	2A NB
CMA120	6A NB	3A NB
CMA350	6.3A SB	3.15A SB

APPLICATIONS

Commercial/Industrial Paging System

CMA60



This application shows a CMA60 being used in a commercial/industrial paging system. Channel #1 is set for input from the telephone paging line, and is assigned both as a priority channel and manual muting of -20dB. Channel #2 is set for input from the security paging microphone, which also has a push-to-talk switch wired to the Mute/Chime terminals of the CMA60. Channel #3 is set for input from the line-level background music source, and is assigned manual and auto muting of -20dB. Therefore, telephone paging will automatically mute only the background music, whereas, security paging will manually mute both the background music and the telephone paging. The CMA60 is set for 'xfrm' output and is connected to a 70V distributed speaker system. **WARNING: THE ABOVE DIAGRAM SHOWS THE OUTPUT TERMINAL COVER REMOVED FOR CLARITY ONLY. THE COVER MUST BE INSTALLED WHEN THE UNIT IS ENERGIZED.**

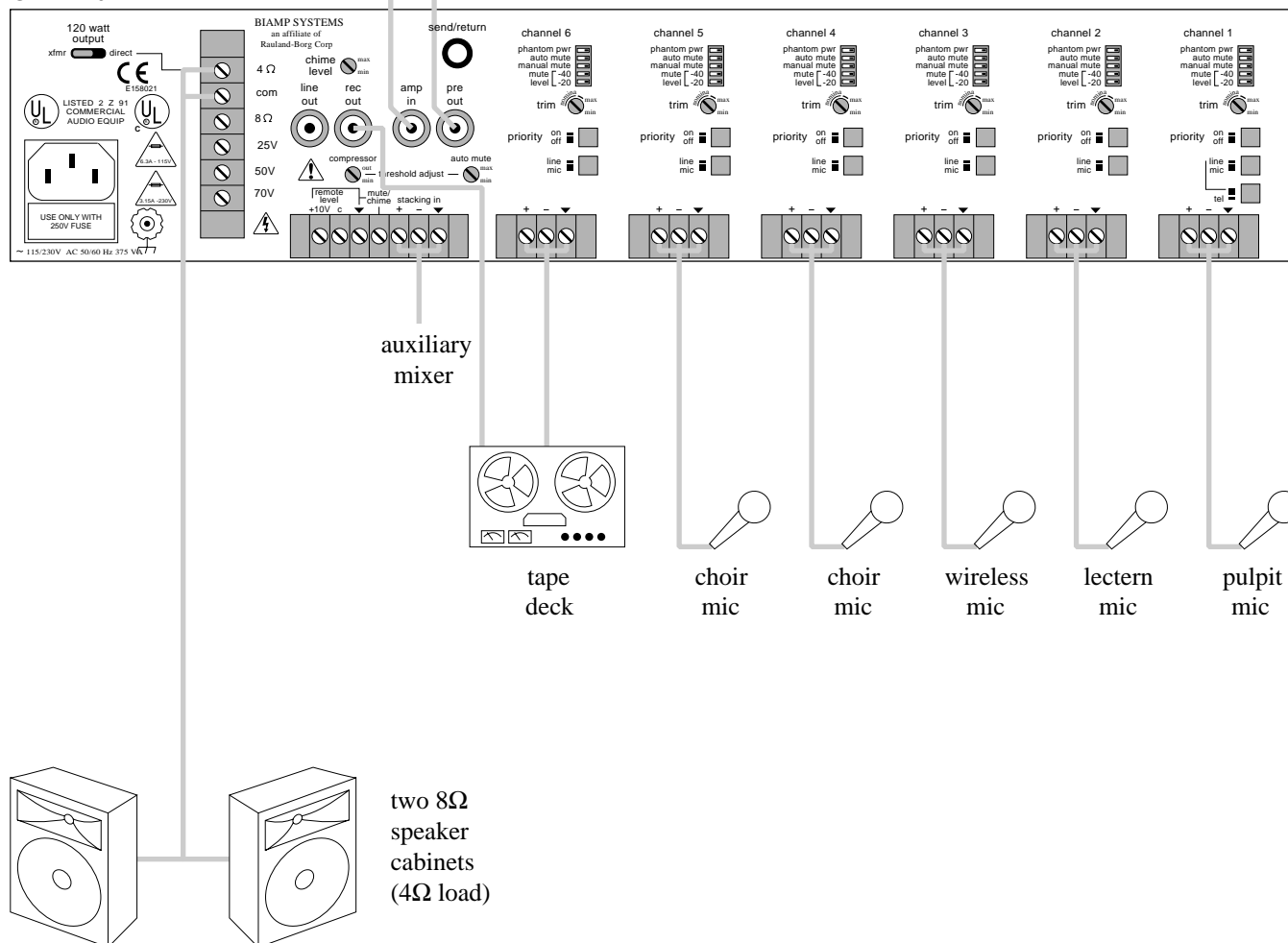
APPLICATIONS

Church Sound Reinforcement System

MSP11



CMA120

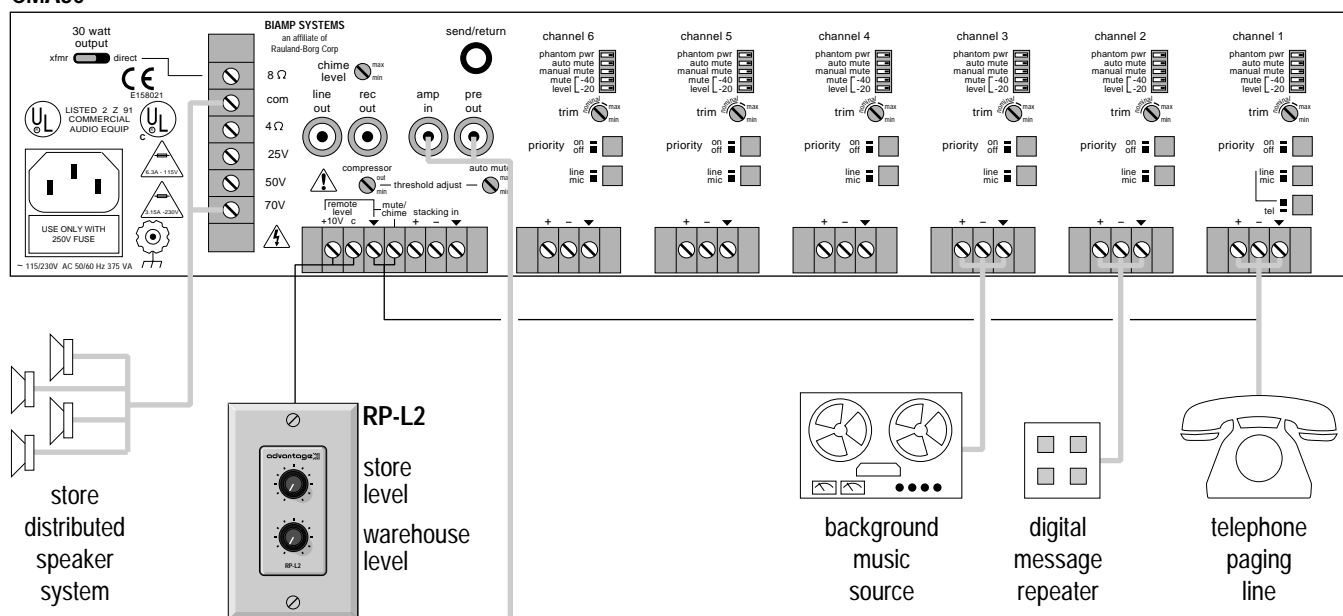


This application shows a CMA120 being used in a church sound reinforcement system. Channels #1-5 are set for input from the various microphones. Channel #6 is set for input from the tape deck (playback), which is also connected to Rec Out of the CMA120 (recording). An ADVANTAGE® MSP11 is inserted between Pre Out & Amp In of the CMA120, providing equalization to compensate for room acoustics, and automatic gain control for consistent output levels. If additional inputs are required, an auxiliary mixer (such as an ADVANTAGE® 601e) may be connected to the Stacking In terminals of the CMA120. The CMA120 is set for 'direct' (4Ω) output and is connected (in parallel) to the two 8Ω speaker cabinets. **WARNING: THE ABOVE DIAGRAM SHOWS THE OUTPUT TERMINAL COVER REMOVED FOR CLARITY ONLY. THE COVER MUST BE INSTALLED WHEN THE UNIT IS ENERGIZED.**

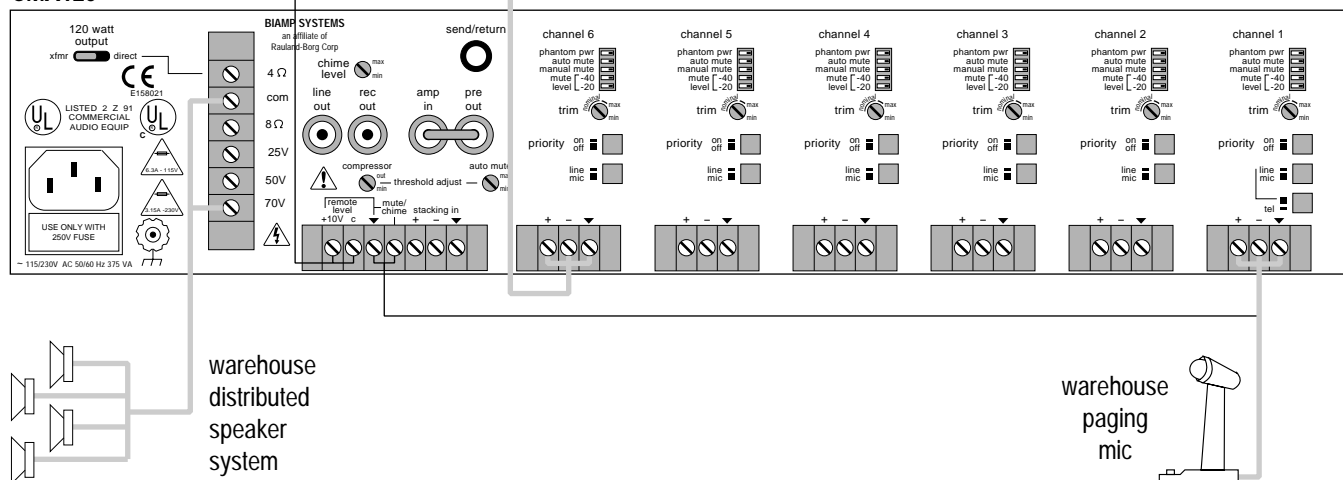
APPLICATIONS

Retail Store Paging System

CMA30



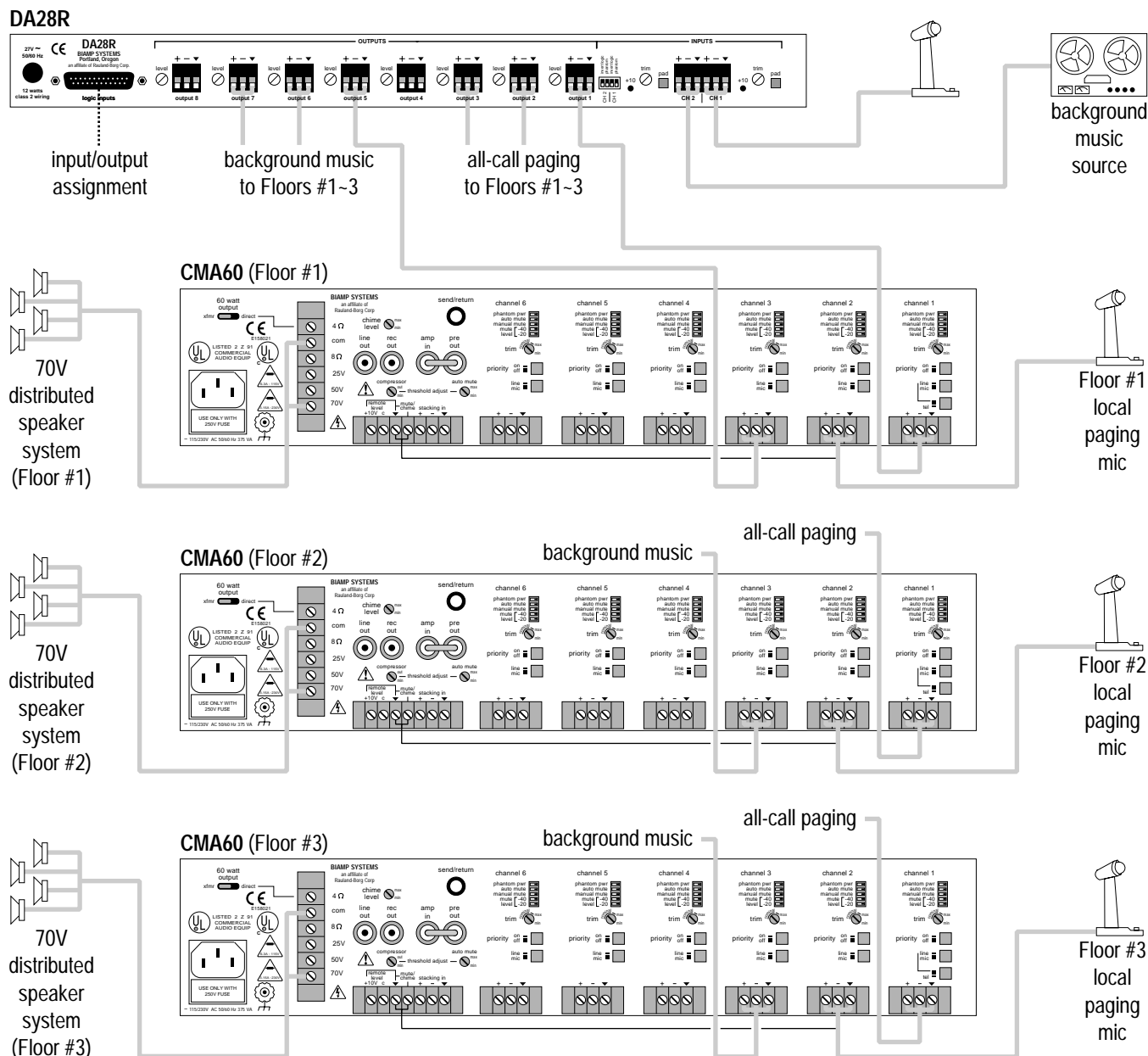
CMA120



This application shows a CMA30 and a CMA120 being used in a retail store paging system. Channel #1 of the CMA30 is set for input from the telephone paging line. The telephone system also provides a paging contact closure which is wired to the Mute/Chime terminals of the CMA30. Channel #2 of the CMA30 is set for input from the line-level digital message repeater, and is assigned both as a priority channel and manual muting of -20dB. Channel #3 of the CMA30 is set for input from the line-level background music source, and is assigned manual and auto muting of -10dB. Channel #1 of the CMA120 is set for input from the warehouse paging microphone, which also has a push-to-talk switch wired to the Mute/Chime terminals of the CMA120. Channel #6 of the CMA120 is set for input from the line-level Pre Out of the CMA30, and is assigned manual muting of -40dB. Therefore, the digital message repeater will automatically mute only the background music (-10dB), whereas, telephone paging will manually mute both the background music (-10dB) and the digital message repeater (-20dB). These combined signals from the CMA30 are then fed to the CMA120 in the warehouse, where they are manually muted by any warehouse paging (-40dB). RP-L2 potentiometers are wired to the Remote Level terminals of both the CMA30 and CMA120, providing remote control of store and warehouse levels. The CMA30 and CMA120 are set for 'xfmr' output and are connected to 70V distributed speaker systems. **WARNING: THE ABOVE DIAGRAM SHOWS THE OUTPUT TERMINAL COVER REMOVED FOR CLARITY ONLY. THE COVER MUST BE INSTALLED WHEN THE UNIT IS ENERGIZED.**

APPLICATIONS

Multi-Floor Office/Hospital Paging System



This application shows three CMA60s being used in a multi-floor office/hospital paging system. An all-call paging microphone and a background music source are connected to an ADVANTAGE® DA28R, which distributes those signals independently to the three CMA60s. Channel #1 of each CMA60 is set for input from line-level all-call paging, and is assigned as a priority channel. Channel #2 of each CMA60 is set for input from the respective floor paging microphone, and is assigned auto muting of -40dB. The push-to-talk switch of each floor paging microphone is wired to the Mute/Chime terminals of the respective CMA60. Channel #3 of each CMA60 is set for input from line-level background music, and is assigned manual and auto muting of -20dB. Therefore, local paging will manually mute the background music only on that floor (-20dB), whereas, all-call paging will automatically mute background music (-20dB) and local paging (-40dB) on all floors. The CMA60s are set for 'xfmr' output and are connected to 70V distributed speaker systems for each floor. **WARNING: THE ABOVE DIAGRAM SHOWS THE OUTPUT TERMINAL COVER REMOVED FOR CLARITY ONLY. THE COVER MUST BE INSTALLED WHEN THE UNIT IS ENERGIZED.**

SPECIFICATIONS

CMA30, CMA60, & CMA120

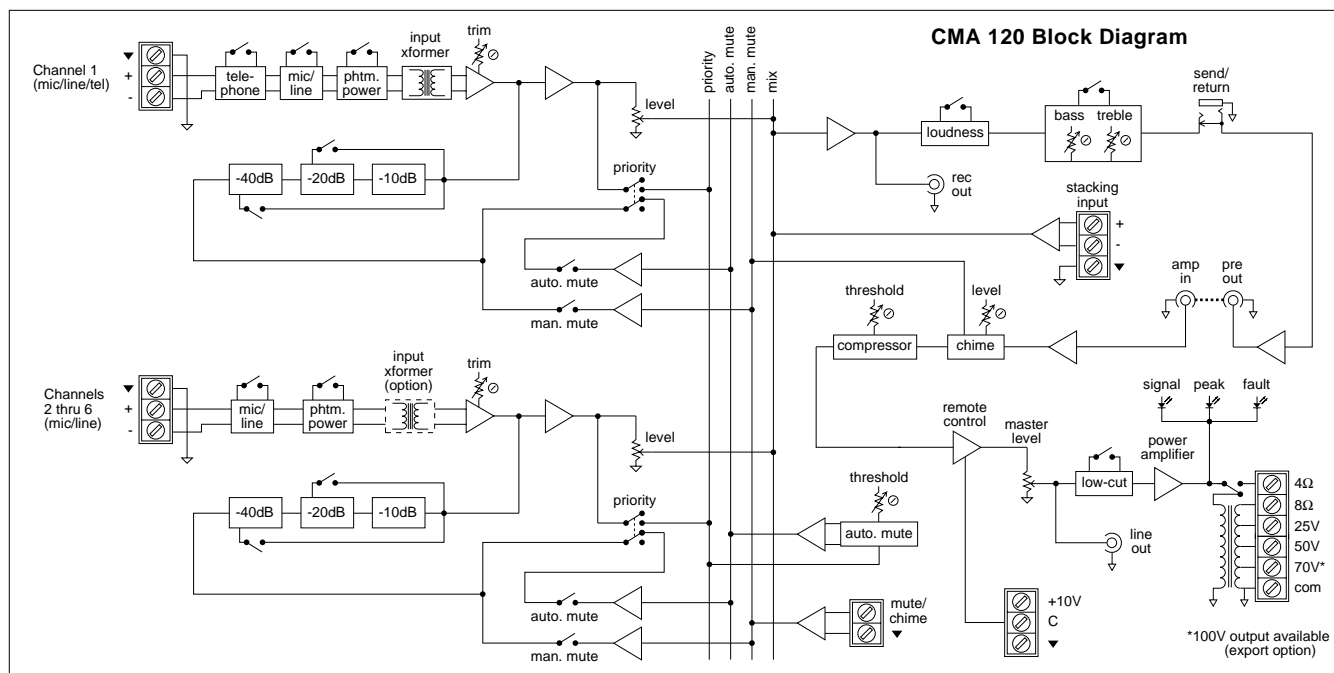
Output Power:		Input Impedance / Sensitivity		
CMA 30	30 Watts	mic inputs	6kΩ / -77dBu (110μV)	
CMA 60	60 Watts	line inputs	15kΩ / -37dBu (14mV)	
CMA 120	120 Watts	telephone inputs	600Ω / -60dBu (775μV)	
Power Bandwidth (THD < 0.4%):		amplifier input	10kΩ / +4dBu (1.2V)	
direct output	20Hz~20kHz	stacking input	20kΩ / -8dBu (300mV)	
transformer output	50Hz~20kHz	patch/return input	10kΩ / -8dBu (300mV)	
Frequency Response (+0/-1.5dB):		Output Impedance / Level:		
direct output	20Hz~20kHz	preamp output & line output	200Ω / +4dBu (1.2V)	
transformer output	50Hz~20kHz	record output	200Ω / +4dBu (1.2V)	
Total Harmonic Distortion (1kHz @ rated power):		patch/send output	50Ω / -8dBu (300mV)	
Output Regulation (no load to full load)		Amplifier Output Impedance / Level:		
Equivalent Input Noise (mic in, 150Ω termination):		<u>CMA 30</u>	<u>CMA 60</u>	<u>CMA 120</u>
Signal-to-Noise Ratio (20Hz-20kHz @ rated power):		4Ω / 11V	4Ω / 16V	4Ω / 22V
line inputs	78dB	8Ω / 16V	8Ω / 22V	8Ω / 31V
telephone inputs	78dB	20.8Ω / 25V	10.4Ω / 25V	5.2Ω / 25V
master level off	98dB	83.3Ω / 50V	41.7Ω / 50V	20.8Ω / 50V
Compressor:		163.3Ω / 70V	81.7Ω / 70V	40.8Ω / 70V
attack time	< 1mSecond	333.3Ω / 100V (export)	166.7Ω / 100V (export)	83.3Ω / 100V (export)
release time	> 1 Second	Power Consumption (120VAC 60Hz / 240VAC 50Hz):		
compression ratio	4 : 1	<u>CMA 30</u>	<u>CMA 60</u>	<u>CMA 120</u>
threshold adjust range	15dB	< 90W	< 220W	< 375W
Dimensions (all models; includes rack/handles & feet):		Weight:		
height (two rack spaces)	3.68" (93.5mm)	CMA 30	17.64 lbs. (8kg)	
width	19" (482mm)	CMA 60	22 lbs. (10kg)	
depth	14.33" (364mm)	CMA 120	26.45 lbs. (12kg)	

CMA350

Output Power:		350 Watts	Output Impedance / Level:	
Power Bandwidth (THD < 0.5%):			record output, preamp output, & line output	200 Ω / +4dBu (1.2V)
direct output	20Hz-20kHz		patch/send output	50 Ω / -8dBu (300mV)
transformer output	50Hz-20kHz		Amplifier Output Impedance / Level:	
Frequency Response (+0/-1.5dB):				4 Ω / 37.4V
direct output	20Hz-20kHz			8 Ω / 53V
transformer output	50Hz-20kHz			1.8 Ω / 25V
THD + Noise (1kHz @ rated power):		< 0.25%		7.1 Ω / 50V
Output Regulation (no load to full load)		< 0.5dB		14 Ω / 70V (28.6 Ω / 100V export)
Equivalent Input Noise (mic in, 150 Ω termination):		-123dBu	Compressor:	
Signal-to-Noise Ratio (20Hz-20kHz @ rated power):			attack time	< 1mSecond
line inputs & telephone input	78dB		release time	> 1 Second
master level off	98dB		compression ratio	4 : 1
Input Impedance / Sensitivity			threshold adjust range	15dB
mic inputs	6k Ω / -77dBu (110 μ V)		Power Consumption (120/240VAC 60/50Hz):	
line inputs	15k Ω / -37dBu (14mV)		< 760 Watts	
telephone inputs	600 Ω / -60dBu (775 μ V)		Dimensions (includes rack/handles & feet):	
amplifier input	10k Ω / +4dBu (1.2V)		height (three rack spaces)	5.24" (133mm)
stacking input	20k Ω / -8dBu (300mV)		width	19" (483mm)
patch/return input	10k Ω / -8dBu (300mV)		depth	14" (356mm)
			Weight:	51 lbs. (23.13kg)

BLOCK DIAGRAM

CMA30, CMA60, CMA120, & CMA350



WARRANTY

BIAMP SYSTEMS IS PLEASED TO EXTEND THE FOLLOWING 5-YEAR LIMITED WARRANTY TO THE ORIGINAL PURCHASER OF THE PROFESSIONAL SOUND EQUIPMENT DESCRIBED IN THIS MANUAL.

BIAMP Systems expressly warrants this product to be free from defects in material and workmanship for a period of 5 YEARS from the date of purchase as a new product from an authorized BIAMP Systems dealer under the following conditions.

1. The Purchaser is responsible for completing and mailing to BIAMP Systems, within 10 days of purchase, the attached warranty application.

2. In the event the warranted BIAMP Systems product requires service during the warranty period, BIAMP Systems will repair or replace, at its option, defective materials, provided you have identified yourself as the original purchaser of the product to any authorized BIAMP Systems Service Center. Transportation and insurance charges to and from an authorized Service Center or the BIAMP Systems factory for warranted products or components thereof to obtain repairs shall be the responsibility of the purchaser.

3. This warranty will be VOIDED if the serial number has been removed or defaced; or if the product has been subjected to accidental damage, abuse, rental usage, alterations, or attempted repair by any person not authorized by BIAMP Systems to make repairs; or if the product has been installed contrary to BIAMP Systems's recommendations.

4. Electro-mechanical fans, electrolytic capacitors, and the normal wear and tear of appearance items such as paint, knobs, handles, and covers are not covered under this warranty.

5. BIAMP SYSTEMS SHALL NOT IN ANY EVENT BE LIABLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING LOST PROFITS, LOSS OF USE, PROPERTY DAMAGE, INJURY TO GOODWILL, OR OTHER ECONOMIC LOSS OF ANY SORT. EXCEPT AS EXPRESSLY PROVIDED HEREIN, BIAMP SYSTEMS DISCLAIMS ALL OTHER LIABILITY TO PURCHASER OR ANY OTHER PERSONS ARISING OUT OF USE OR PERFORMANCE OF THE PRODUCT, INCLUDING LIABILITY FOR NEGLIGENCE OR STRICT LIABILITY IN TORT.

6. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED. BIAMP SYSTEMS EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE REMEDIES SET FORTH HEREIN SHALL BE THE PURCHASER'S SOLE AND EXCLUSIVE REMEDIES WITH RESPECT TO ANY DEFECTIVE PRODUCT. THE AGENTS, EMPLOYEES, DISTRIBUTORS, AND DEALERS OF BIAMP SYSTEMS ARE NOT AUTHORIZED TO MODIFY THIS WARRANTY OR TO MAKE ADDITIONAL WARRANTIES BINDING ON BIAMP SYSTEMS. ACCORDINGLY, ADDITIONAL STATEMENTS SUCH AS DEALER ADVERTISEMENTS OR REPRESENTATIONS DO NOT CONSTITUTE WARRANTIES BY BIAMP SYSTEMS.

7. No action for breach of this warranty may be commenced more than one year after the expiration of this warranty.

Thank you for purchasing BIAMP SYSTEMS...
AMERICAN SOUND CRAFTSMANSHIP

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